

Name: \_\_\_\_\_  
PC: Review Sheet for Exam 1 Quarter 1

Date: \_\_\_\_\_

This review sheet is not comprehensive. Please look over your notes and worksheets to prepare fully spending time specifically on questions that you struggled with. **PLEASE DO ALL WORK ON SEPARATE LINED PAPER.**

**In 1-9, solve each inequality and express the solution set in (a) interval notation, and (b) set builder notation.**

1.  $x^2 - 9x + 14 < 0$

2.  $4 - 3x \leq -(1 + 8x)$

3.  $\frac{x+4}{5-x} \leq 0$

4.  $\frac{3x}{2} \leq \frac{3x-6}{4}$

5.  $x^2 + 4x < 0$

6.  $1 + \frac{2}{x+1} \leq \frac{2}{x}$

7.  $\frac{4x}{2x+3} > 2$

8.  $\frac{x+1}{x} < 3$

9.  $\frac{x^2 - 2x - 8}{(x-1)^2} < 0$

**In 10 - 21, factor each completely.**

10.  $56x^3 - 28x^2 + 7x$

11.  $x^3 - 3x^2 - 4x + 12$

12.  $3x^2 - 75$

13.  $ax^2 + 15 - 5ax - 3x$

14.  $6x^2 - 11x - 10$

15.  $a^8 - b^8$

16.  $x^2 - 8x + 4$

17.  $x^4 - x^2 - 12$

18.  $16x^2 - 25$

19.  $x + 1 + y + xy$

20.  $x^3 + 27$

21.  $8x^3 - 125y^3$